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09/382,677	08/25/1999	MASAAKI HIROKI	0756-2016	5550

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ART UNIT	PAPER NUMBER
2675	15

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/382,677	Applicant(s) HIROKI, MASAAKI	
	Examiner Uchendu O Anyaso	Art Unit 2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

1. **Claims 1-29** are pending in this action.

Claim Objections

2. **Claims 2 and 3** are objected to because of the following informalities: Claims 2 and 3 are exactly identical. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 5-7** and **17-19** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to **claims 5** and **17**, applicant claims how a modulated clock signal may be obtained by randomly shifting the frequency of the standard clock signal. However, the specification does not describe this concept to enable one skilled in the art to make and/or use this concept of randomly shifting the frequency of the standard clock signal.

With respect to **claim 6, 7, 18** and **19**, applicant claims a modulated clock signal that may be obtained by shifting the frequency of the standard clock signal in the form of a triangular wave and sine wave. However, the specification does not describe this concept to enable one

skilled in the art to make and/or use this concept of obtaining a modulated clock signal by shifting the frequency of the standard clock signal in the form of a triangular wave and sine wave.

Applicant is advised to clarify these concepts.

Claim Rejections - 35 USC ' 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. **Claims 1, 5, 12, 13 and 17** are rejected under 35 U.S.C. 102(e) as being anticipated by *Bassetti et al* (U.S. Patent 6,046,735).

Regarding **Claim 1, 12, 13**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Regarding **Claims 5 and 17**, in further discussion of claims 1 and 12, Bassetti discloses how a modulated clock signal may be obtained by randomly shifting the frequency of the modulated clock (column 5, lines 30-36).

Claim Rejections - 35 USC ' 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claims 2, 3** and **8-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Taguchi* (U.S. Patent 6,115,020).

Regarding **Claim 2** and **3**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

Furthermore, Bassetti teaches how to obtain a modulated clock signal by teaching a display using a modulated clock wherein different lines have pixels displaced relative to pixels in other lines (column 4, lines 46-48, figure 5 at 11, 13, 15). For example, horizontal line 11 is written with a 42 MHz pixel clock, while line 13 is written with a 40 MHz pixel clock and line 15 with a 38 MHz pixel clock such that the difference in the width of any individual pixel is

slight, when accumulated over 100 pixels, the difference is apparent (column 4, lines 48-54, figure 5 at 11, 13, 15).

Furthermore, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59).

Furthermore, Bassetti teaches how to supply the sampled image to a corresponding pixel to obtain an image (column 6, lines 35-37).

Also, Bassetti teaches a digital-to-analog converter (DAC) that is coupled to receive pixels from the pixel output of the pixel-transfer path (column 6, lines 28-30; column 15, lines 46-67, figure 15 at 114).

However, Bassetti does not teach an analog-to-digital converter (A/D) that samples an analog signal. On the other hand, Taguchi teaches an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement ration wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals (column 3, lines 51-55; column 25, lines 39-52, figure 45 at 621).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal, Taguchi teaches how to achieve A/D conversion in such a device. The motivation for combining these inventions would have been to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image (column 3, lines 41-55).

Regarding **Claims 8-11**, in further discussion of claim 2, Bassetti discloses how his device would be used in an active matrix type device by disclosing the use of his within a TFT-type display (column 1, lines 57-59). It is well known in the art how such a display would be an active matrix type display device, passive matrix type display device, liquid crystal type display device or an electroluminescence display.

9. **Claim 4** and **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Oakley* (U.S. Patent 6,281,873).

Regarding **Claims 4** and **16**, in further discussion of claim 1 and 12, Bassetti does not teach a method wherein the modulated clock is obtained by shifting a frequency of the reference clock signal on the basis of a gaussian histogram. On the other hand, Oakley teaches a video processing technique related to a vertical scaling process and apparatus wherein each frame of the image consists of a collection of horizontal scan lines which are intensity modulated to form an image by decreasing the frequency of the incoming sampling clock or increasing the frequency of the encoder pixel clock (*see* column 3, lines 1-25; *see also* column 1, lines 5-7). *Oakley* goes on to teach that by changing a gaussian filter coefficients of the kernel, the output can be time shifted by fractions of the clock period (column 4, lines 6-18).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Oakley's inventions because while the combination of Bassetti teaches how to frequency modulate a video clock signal, Oakley teaches changing a gaussian filter coefficients of the kernel so that the output can be time shifted by fractions of the clock period (column 4,

lines 6-18). The motivation for combining these inventions would have been to scale down or shrink video frames in a horizontal or vertical direction (*see* column 1, lines 64-67).

10. **Claims 6, 7, 18** and **19** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Guttner* (U.S. Patent 4,713,688).

Regarding **Claims 6, 7, 18** and **19**, in further discussion of claim 1 and 12, Bassetti does not teach a display device wherein the modulated clock signal is obtained by shifting a frequency of the reference clock signal in the form of a sine wave or triangular wave. On the other hand, *Guttner* teaches offset rasters that facilitate the offset demodulation process (column 11, lines 6-20; *see also* column 8, lines 45-58, figure 10) wherein the picture signal spectrum is periodic in the direction of the horizontal spatial frequencies due to the horizontal sampling in the spatial domain (column 5, lines 51-65, figure 3). Figure 3 shows the clock signal in the form of a sine wave.

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and *Guttner* inventions because while Bassetti teaches how to frequency modulate a video clock signal, *Guttner* teaches how the shifting of the clock signal would be represented in the form of a periodic sine wave or triangular wave. The motivation for combining these inventions would have been to transmit an image signal with significantly improved horizontal resolution (*see generally* column 1, lines 11-18).

11. **Claims 14, 15 and 20-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bassetti et al* (U.S. Patent 6,046,735) in view of *Martin et al* (U.S. Patent 5,703,621).

Regarding **Claims 14** and **15**, Bassetti teaches a video clock that has a constant frequency wherein a modulated video clock means supplies a frequency-modulated video clock to the flat-panel converter such that the flat-panel converter transfers pixels out the panel-interface output to the flat-panel display at a modulated rate proportional to a current frequency of the frequency-modulated video clock (column 6, lines 19-24).

However, Bassetti does not teach the display device having passive matrix circuit. On the other hand, Martin teaches techniques for presenting all images types such as video images (column 1, lines 45-49) wherein the display includes a monochrome display (claim 9, column 20, lines 54-56). Martin also teaches that his invention is capable of performing any necessary scaling, cropping and segmentation of the input image (column 14, lines 9-19, figure 5 at 140 & 142).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Martin teachings in designing a display device wherein Bassetti teaches how to frequency modulate a video clock signal and Martin teaches a monochrome display device with scaling, cropping and segmentation capabilities. The motivation for combining these inventions would have been to present high quality images in the display device (column 4, lines 66-67 *through* column 5, line 1).

Regarding **Claims 20** and **21**, in further discussion of claim 12, *Martin* teaches that his display device could be an LCD, an electroluminescent display or any other type of display (column 18, lines 62-67).

Regarding **Claims 22-29**, in further discussion of claim 12, it is well known in the art that devices such as a mobile telephone, projector, video camera, mobile computer, head mounted display, personal computer, recorder and a digital camera all comprise a display device. Thus, it would have been obvious to a person skilled in the art to utilize such a display device as described in *Bassetti and Martin* in these equipment.

Response to Arguments

12. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

In response to all of applicant's arguments, please see rejection above.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,568,163 to *Okumura* for an apparatus for driving gate storage type liquid, display panel capable of simultaneously driving two scan lines.

U.S. Patent 5,115,189 to *Holcomb* for an anti-aliasing dithering method and apparatus for low frequency signal sampling.

U.S. Patent 5,025,400 to *Cook et al* for pseudo-random point sampling techniques in computer graphics.

U.S. Patent 5,821,913 to *Mamiya* for a method of color image enlargement in which each RGB subpixel is given a specific brightness weight on the liquid crystal display.

U.S. Patent 5,334,996 to *Tanigaki et al* for a color display apparatus.

U.S. Patent 5,600,347 to *Thompson et al* for a horizontal image expansion system for flat panel displays.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Uchendu O. Anyaso** whose telephone number is **(703) 306-5934.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Steve Saras**, can be reached at **(703) 305-9720.**

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Uchendu O. Anyaso

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